Cronos Technologies, LLC's And Joint Defendants' Technology Tutorial U.S. Patent 5,664,110

Cronos Technologies LLC v. Expedia, Inc.,
C.A. No. 13-1538-LPS

Cronos Technologies, LLC v. Priceline.com, Inc.,
C.A. No. 13-1541-LPS

Cronos Technologies, LLC v. Travelocity.com L.P.,
C.A. No. 13-1544-LPS

February 23, 2015

1

▪ Algorithms

- ▪ A general purpose computer executes program code that defines one or more algorithms:

- ▪ A + B

- ▪ Cos(Θ)

- ▪ (x_0\lor x_1)\land(x_0\lor\lnot x_1)\land(\lnot x_0\lor x_1)\land(\lnot x_0\lor\lnot x_1)

▪ Algorithms

- ▪ An infinite number of algorithms can be used to perform even a simple function.
- ▪ Example – adding X and Y:
- ▪ X + Y
- ▪ -(-x-x)
- ▪ $\sqrt{X^2} + \sqrt{Y^2}$
- ▪ (N*Y + N*X)/N, where N is any number 1 to infinity.

U.S. Patent 5,664,110

United States Patent [19]

Green et al.

[11] Patent Number: 5,664,110

[45] Date of Patent: Sep. 2, 1997

[54] REMOTE ORDERING SYSTEM

[75] Inventors: **Jonathan B. Green**, Belmont; **William R. Pope**, Cambridge, both of Mass.

[73] Assignee: **Highpoint Systems, Inc.**, Belmont, Mass.

[21] Appl. No.: **351,795**

[22] Filed: **Dec. 8, 1994**

[51] Int. Cl.^{6} G06F 7/06; G06F 17/30
[52] U.S. Cl. 705/26; 705/1; 705/27
[58] Field of Search 364/401, 406

"Thomas Unveils Online Purchasing Network (Thomas Publishing introduces Connects electronic corporate purchasing network for industrial products", Electronic Buyers News, p.60, Dec. 11, 1995, Dialog file 9, Acc. No. 01355145.

Bethoney, "Made to order for online catalogs (iCat's Electronic commerce suite . . .)", PC Week, vol. 13, No. 45, p.80(1), Nov. 11, 1996, Dialog file 47 Acc. No. 04634978.

Staten, "iCat to do Net commerce. (Interactive Catalog's iCat Electronic Commerce Suite) . . . ", MacWeek, v. 10, n. 17, p.18(2), Apr. 29, 1996, Dialog file 148, Acc. No. 08633302.

Patent Number: 5,664,110

Priority Date: December 8, 1994

5,047,614	9/1991	Bimco		235/385
5,117,354	5/1992	Long et al.		364/401
5,195,130	3/1993	Weiss et al.		379/98
5,250,789	10/1993	Johnsen		235/383
5,319,542	6/1994	King, Jr. et al.		364/401

OTHER PUBLICATIONS

Fergenoff, "CD–ROM Comes home=Bell Atlantic's intelligent home of the 21st century. (home–based information services", CD–ROM News Extra, v. 1, n. 6, p. 16(4), Dec. 1993, Dialog File 148, Acc. #06795500.

units (DPUs) (the user device) choose create and transmission of the order lists. Coded data read into each DPU identifies items to be added to the order lists. A DPU database contains user-discernable item information stored according to the associated coded data and is capable of learning new or updating old item information when in communication with the merchant database. Item information can be automatically or manually deleted to free DPU memory.

75 Claims, 15 Drawing Sheets

Background from the '110 Patent

- *The disclosure relates to the field of "remote ordering systems" that allow a user to order items from one or more merchants without traveling to the merchant's physical store. Some of the prior art systems, however, fail to teach how to display a user-interpretable description of the items in the order list, such as the product name, product size, and cost, while the list is being constructed. For example, the prior art system described in U.S. Patent No. 4,654,482 (DeAngelis) provides the user with user-interpretable product descriptions only when the order has been completed, and only while connected to the merchant's order processing system. The disclosure of the '110 patent attempts to solve this problem by providing the user the ability to build, edit, and review a user-interpretable display of one or more order lists.*

Source: '110 Patent, Col. 1:5-2:8.

'110 Patent : Claim 1

Claim 1 covers a "remote ordering terminal ... " comprising each of the listed elements [a]-[h].

[Preamble] 1. A remote ordering terminal for providing at least one list of at least one item or group of items to a remotely located order processing system associated with one or more merchants on each of a plurality of occasions, each item or group of items having an item code associated therewith, said remote ordering terminal comprising:

- [a] user and/or merchant identifier means;
- [b] at least one data entry device for providing said terminal with said item associated item codes and with data from said user and/or merchant identifier means;
- [c] a database unit providing a user-specific database including user-discernable item data associated with item codes for user-selected items or groups of items;
- [d] memory to provide storage for said user-specific database, said memory in communication with said at least one data entry device for storing said at least one list;
- [e] communication means for associating said memory and said order processing system upon user command for remotely accessing said order processing system over a multi-user network, for transmitting said at least one list to said order processing system using said data from said user and/or merchant identifier means, and for receiving new and/or replacement user-discernable item data from said order processing system during association of said memory and said order processing system, said new and/or replacement user-discernable item data corresponding only to said at least one item or group of items of said at least one list;
- [f] a message display portion in communication with said memory and said user-specific database for displaying order pertinent information including said user-discernable item data from said memory; and
- [g] at least one command entry device responsive to user selection of items from said order pertinent information for assembling said at least one list and for enabling said user command, resulting in said transmitting of said at least one list to said order processing system,
- [h] wherein said at least one list is comprised of an order to be processed by said order processing system, or a provisional order list transmitted to said order processing system, transmission of either resulting in on-demand receipt of said new and/or replacement user-discernable item data within said user-specific database for said at least one item or group of items.

6

'110 Patent : Claim 22

Claim 22 covers a method for "remote ordering ... " comprising each of the listed steps [a]-[g].

[Preamble] 22. A method for remote ordering at least one desired item by a user from one of a plurality of merchants using a system having a user device, a central computer, one of a plurality of merchant databases, and a communications link including a multi-user network, said at least one desired item having a unique identifying code associated therewith, the method comprising:

- [a] storing for a plurality of user-specific items, in an identifier database accessible at said user device for user perception at said user device, a user-cognizable identifier of said at least one item corresponding to said identifying code;

- [b] user inputting said identifying code corresponding to said at least one desired item into said user device by machine recognition of said user input identifying code;

- [c] accumulating from said identifier database selected ones of said user-cognizable identifiers corresponding to said input identifying codes in at least one list of desired items;

- [d] selectively associating a transaction identifier having user and/or merchant identifications with said user device to identify a selected merchant database and/or to identify said user to a selected merchant database ;

- [e] commanding said user device to establish remote communication between said user device and said selected merchant database corresponding to said merchant identification through said central computer over said communications link including said multi-user network;

- [f] interactively updating only said selected one of said user-cognizable identifiers in said identifier database of user-specific items with current information provided by said merchant database over said communications link in response to a user action at said user device; and

- [g] said user action including
  - [(i)] the communication of a provisional list of desired items transmitted to said selected merchant database for the purpose of providing said interactive updating, or the communication of an order list of desired items transmitted to said selected merchant database for the purpose of providing said interactive updating and remote ordering said desired items comprising said order list, and
  - [(ii)] passing transaction specific information over said communications link including said identifying codes between said user device and said selected merchant database.

7

'110 Patent : Claim 45

<u>Claim 45 covers a "remote ordering system ..." comprising each of the listed elements [a]-[f].</u>

[Preamble] 45. A remote ordering system for processing at least one order list of at least one user-selected item to be ordered, each said item having a corresponding item code, said system comprising :

- [a] a central inventory database;
- [b] a user-specific database of user-discernable item data corresponding to said item codes;
- [c] central processing means for providing remote communication over a multi-user network between said central inventory database and said user-specific database in response to a user action for teaching user-discernable item data received from said central inventory database to said user-specific database, for interactively updating said user-discernable item data contained within said user-specific database with replacement user-discernable item data received from said central inventory database in response to a user action, and for aging-out infrequently accessed user-discernable item data from said user-specific database;
- [d] memory means in communication with said central processing means and thus to said user-specific database for maintaining said at least one order list; and;
- [e] an order device associated with said user-specific database, in communication with said central inventory database via said central processing means and said multi-user network, and responsive to user input, said order device comprising;
    - [(i)] communication means for interfacing said order device with said central processing means
    - [(ii)] identifier means for providing said remote ordering system with user and/or merchant information;
    - [(iii)] input means for providing said order service with said item codes corresponding to said at least one user-selected item to be ordered;
    - [(iv)] a display in communication with said memory means and said central processing means for providing order pertinent information, including said user-discernable item data, to a user; and
    - [(v)] management means for controlling said display and said communication means, said management means responsive to said user input and said central processing means,
- [f] wherein said user-discernable item data to be taught and said replacement user-discernable item data correspond only to said at least one user-selected item to be ordered of said at least one order list and are interactively receivable as a result of said central processing means, responding to said user input at said order device, transmitting to said central inventory database said at least one order list comprising a list of items to be ordered or a provisional list of items for which updated user-discernable item data is desired.

8

'110 Patent

- The patent specification discloses multiple embodiments.
- **Fig. 1** comprises:
    - a display/processor unit (DPU), *.i.e.* the user device
    - a data format/transfer computer (DFTC), *i.e.*, the central computer or server
    - at least one merchant database
- "In an exemplary embodiment…one DPU 10 is in communication with one merchant database 14 through a DFTC 12. However, it is envisaged that each system will typically have multiple DPUs 10 and merchant databases 14." (Col. 2:58-62.)
- The merchant database does not have one specific physical location. It can be located within the central server, or at a merchant location. (Col. 2:63-3:4.)

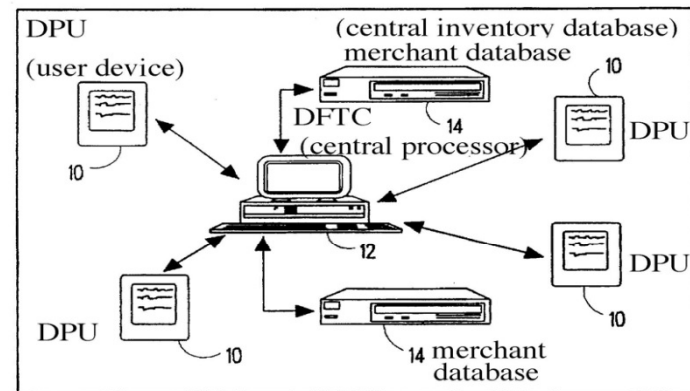U.S. Patent   Sep. 2, 1997   Sheet 1 of 15   5,664,110

FIG. 1

9

'110 Patent

- The "data entry device" (Claim 1[b]) is a device that provides input codes to the user device (Col. 3:5-7)
  - The specification discloses multiple embodiments of the "data entry device," including:
    - A "optical scanning wand" that can scan and decode UPC codes (Col. 3:7-33)
    - A standard "QWERTY" keyboard or custom keypad (Col. 3:33-37)
    - Voice-recognition software or magnetic stripe input means (Col. 3:37-38)
    - Touch-screen display (Col. 4:44-53)
    - Mouse, light pen, trackball or remote pointing device such as an air mouse, "either in wired or wireless communication with the DPU" (Col. 4:53-60)
- The same device can serve as both the "data entry device" and "command entry device" (Claim 1[g]) (Col. 4:58-60)

'110 Patent

- **"Smart terminal" embodiment**
  - The database of user-discernable product information corresponding to the user-input codes ("user-specific database") is stored on the user device in random access memory (RAM), and/or within removable media such as a CD-ROM or disk (Col. 3:39-4:21)
  - The user enters an input code with the data entry device (e.g. mouse, keyboard), and user-discernable product information from the user-specific database corresponding to the input code is then added to the order list and displayed to the user. The user-discernable product information can be displayed as printed text, images, or a combination of both. (Col. 4:22-39)
  - Once the order list is complete, the user enters a command to submit the order to the merchant via the command entry device. The command entry device can be the same or different device as the data entry device. (Col. 4:40-60)
  - Upon the user's command, the user device establishes communications with the central server. The order list is transmitted to the server, and the server communicates with one or more merchant databases to obtain current product information corresponding to the items on the user's order list, such as availability and the current price. This information is then transmitted for display on the user device and the user-specific database is updated as necessary. (Col. 4:61-5:21; 10:18-28)
  - The central server also interprets coded information to identify the user and the desired merchant, such as the merchant name and location, the user name, and account number, or other transaction specific information. The user and/or merchant identifier means can be stored on the user device or on the central server. (Col. 5:22-38; 10:29-67)

11

'110 Patent

- **"Dumb terminal" embodiment**
  - In an alternative embodiment, "the DPU 10 [user device] is a dumb terminal which must be in communication with the DFTC 12 [central server] in order to provide user-discernable representations of scanned items." (Col. 14:5-9)
  - Thus, the user-specific database is "found *within the DFTC 12* [central server], rather than the DPU 10 RAM 34" in this embodiment. (Col. 14:9-10)

12

'110 Patent

- The "communication means" (Claim 1[e]) performs the following three functions:
    - o "associating said memory and said order processing system upon user command for remotely accessing said order processing system over a multi-user network,"
    - o "transmitting said at least one list to said order processing system using said data from said user and/or merchant identifier means," and
    - o "receiving new and/or replacement user-discernable item data from said order processing system during association of said memory and said order processing system, said new and/or replacement user-discernable item data corresponding only to said at least one item or group of items of said at least one list" (Col. 14:63-15:6)

'110 Patent

- Communication devices described in the specification include the following:
  - o telephone communications, either cellular or wired, via voice or modem (Col. 4:61-63; 13:4-5)
  - o CATV (Col. 4:65)
  - o satellite communications (Col. 4:65)
  - o fiber-optic data transmission (Col. 4:66)
  - o telephonic serial data transfer (Col. 5:16-17)
  - o a serial or parallel transfer of information over a data bus or link (Col. 5:17-18)
  - o a serial transfer of information over a communications network such as the Internet (Col. 5:18-20)
  - o magnetic media (Col. 13:4)
- "Other known communication means are envisioned." (Col. 5:20-21)

14

'110 Patent

- The "central processing means" (Claim 45[c]) performs the following three functions:
  - "providing remote communication over a multi-user network between said central inventory database and said user-specific database in response to a user action for teaching user-discernable item data received from said central inventory database to said user-specific database,"
  - "interactively updating said user-discernable item data contained within said user-specific database with replacement user-discernable item data received from said central inventory database in response to a user action," and
  - "aging-out infrequently accessed user-discernable item data from said user-specific database" (Col. 18:37-47)
- The central processing means (also referred to as a data format/transfer computer DFTC or central computer, such as, for example, a webserver) provides communications between the "order device" associated with the user-specific database (Claim 45[e]) and the "central inventory database" (Claim 45[a]) over a multi-user network such as, for example, the Internet.

15

Cronos Technologies, LLC's And Joint Defendants'

Technology Tutorial
U.S. Patent 5,664,110

THANK YOU